Docket No.: 20347 US1 (C38435/128985)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of :)

Heinrich BACHMANN, *et al.*)

Serial No.: 10/053,192)

Filed: January 15, 2002)

For: **β,β-CAROTENE 15,15'-MONOOXYGENASES, NUCLEIC ACID SEQUENCES CODING THEREFOR AND THEIR USE**)

Examiner: not yet assigned

Art Unit: 1652

New York, NY
September 30, 2002

TRANSMITTAL OF PROPOSED DRAWING CORRECTION

Box Missing Parts
Commissioner For Patents
Washington, D.C. 20231
Sir:

In accordance with 37 CFR § 121(d) and MPEP § 608.02(q) and at the request of the Examiner, (*see* Notice to Filing Missing Parts mailed April 29, 2002), the attached corrected drawing figures (*see* Exhibit 1) are submitted for consideration. It is respectfully requested that the Examiner enter corrected figures 2-8 in this application.

The correction to figures 2-5 is as follows:

a. figures 2-5 have been reformatted to correct the sizes of the margins in order to conform to the requirements of 37 CFR § 1.84(g).

The corrections to figures 6-8 are as follows:

a. figures 7 and 8 have been reformatted to correct the sizes of the margins in order to conform to the requirements of 37 CFR § 1.84(g).

b. all descriptive text, other than text indicating the figure number, has been cancelled from figures 6-8 in order to conform to the requirements of 37 CFR § 1.84(o).

For the convenience of the Examiner, we attach as Exhibit 2 a copy of figures 6-8 as amended (without the redline).

It is submitted that the entry of the corrections to Figures 2-8 does not introduce new matter, and is proper. *See* 37 CFR § 121(a)(6). Accordingly, entry of the attached corrected drawing figures in the above referenced application, respectfully is requested. If the Examiner has any questions regarding this paper, please contact the undersigned.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Box Missing Parts, Commissioner For Patents, Washington, D.C. 20231, on September 30, 2002.

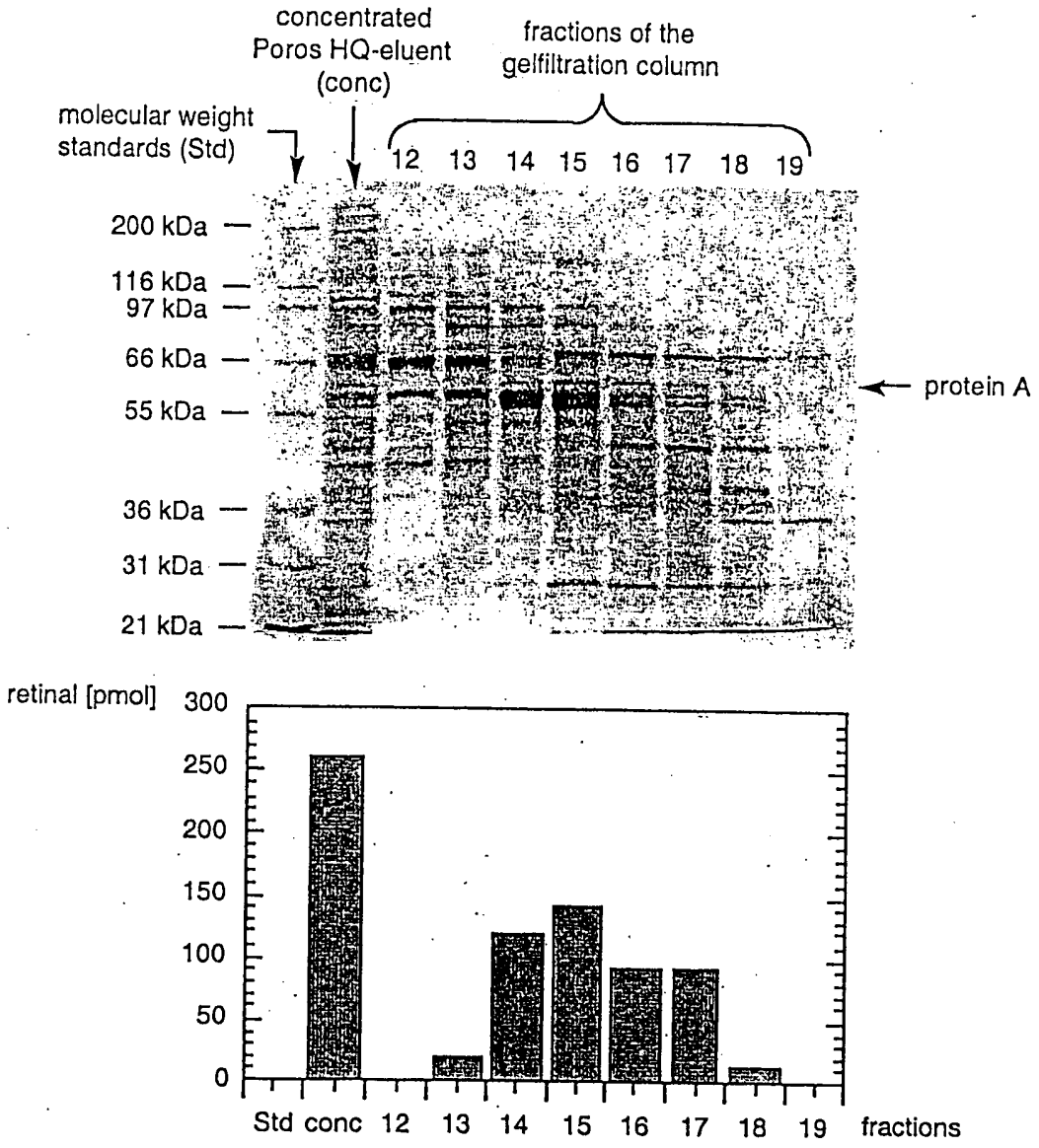
Gonzalo Merino

Respectfully submitted,

By: _____

Gonzalo Merino
Registration No. 51,192
BRYAN CAVE LLP
245 Park Avenue
New York, NY 10167-0034
(212) 692-1800

Figure 1



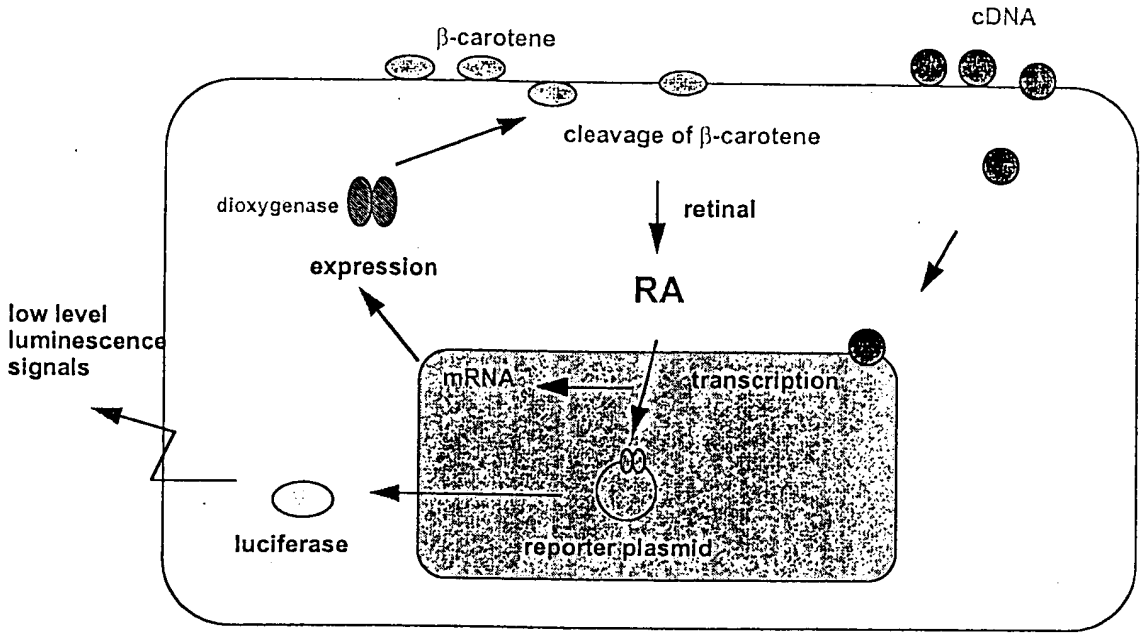


Figure 2

Figure 3
No. 2

Seq. ID

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Figure 4 Seq. ID No. 1

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Figure 5

Seq ID No. 4 and Seq ID No. 5

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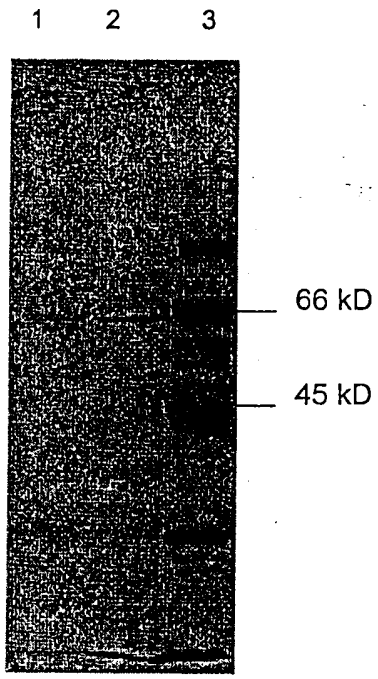


Fig. 6

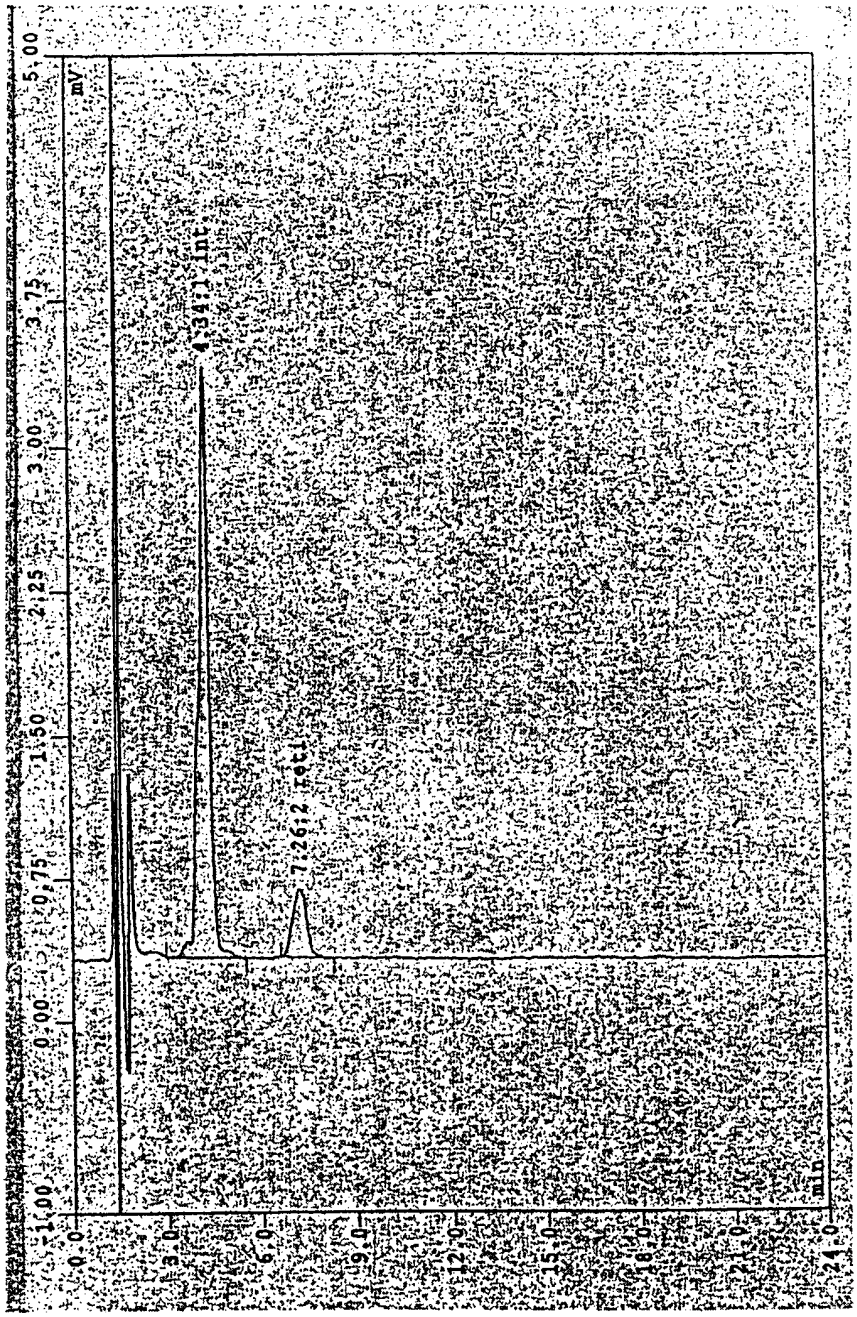


Fig. 7

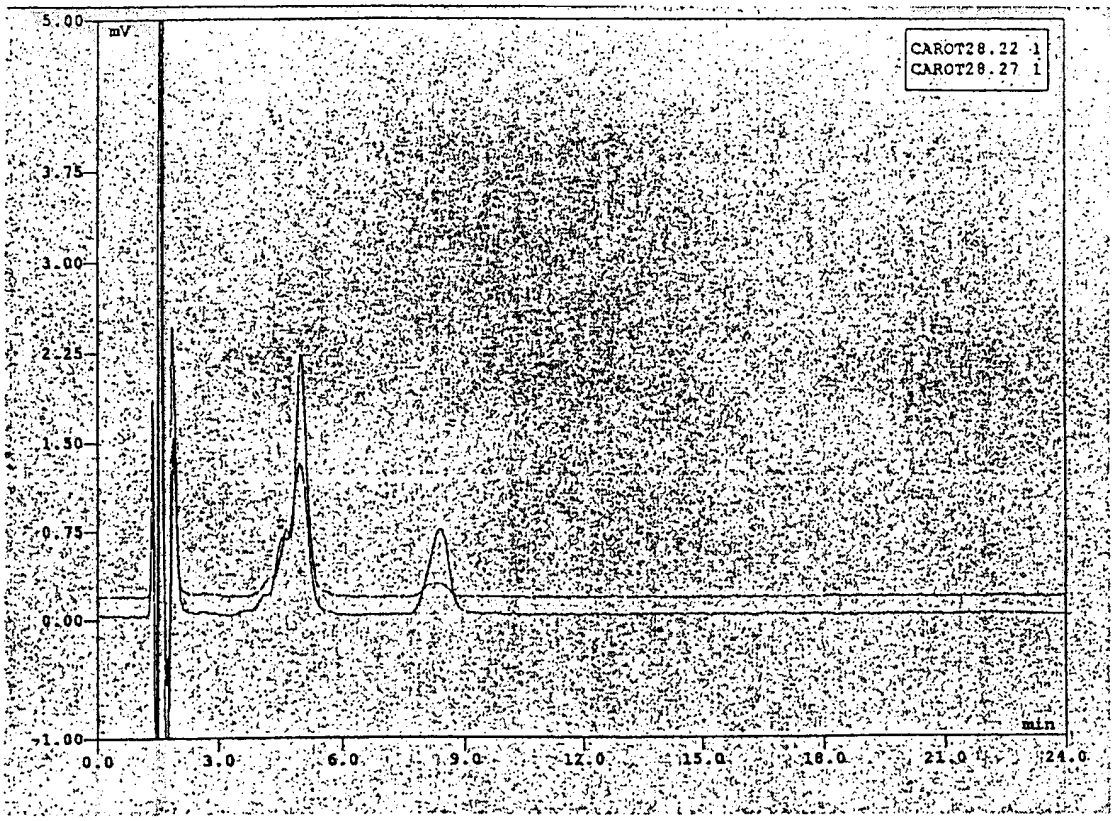
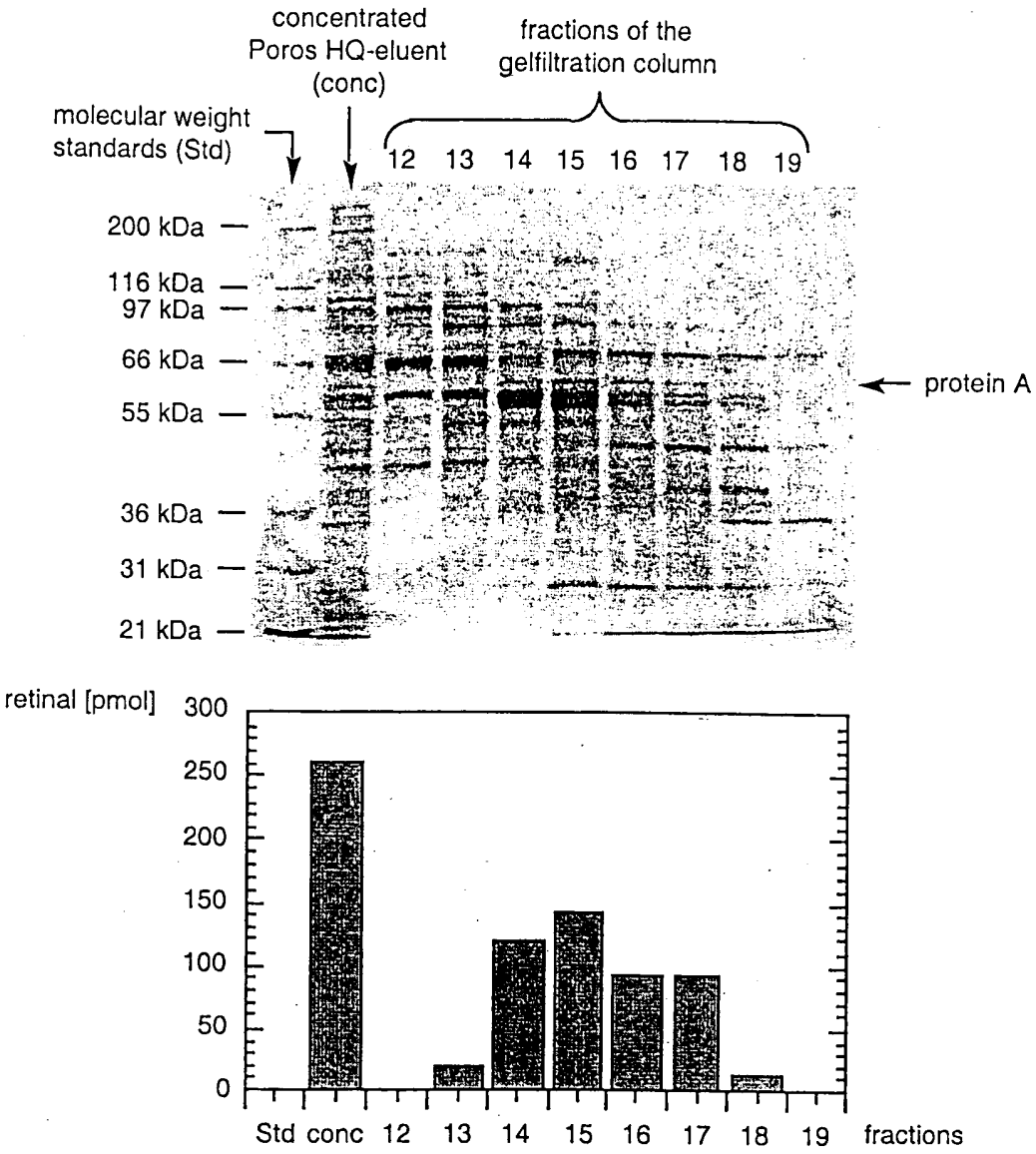


Fig. 8

Figure 1



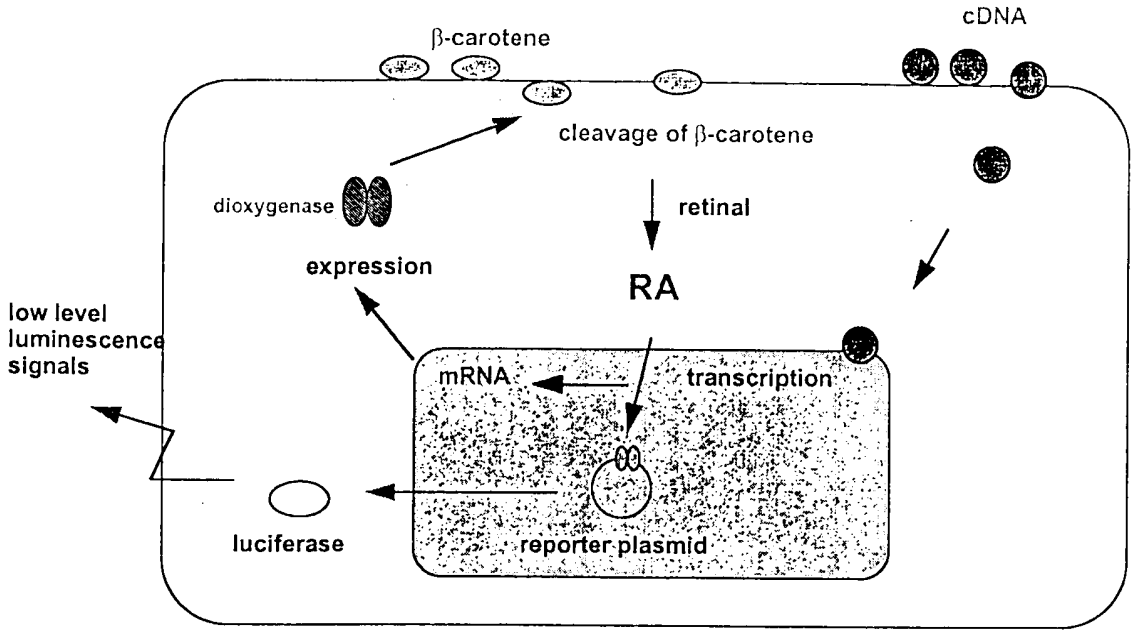


Figure 2

Figure 3
No. 2

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Figure 4 Seq. ID No. 1

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Figure 5 Seq ID No. 4 and Seq ID No. 5

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485 P.FLLILDAKTFKELGRA..TVNVEMHLDLHGMF 515
    | :||||.||   |. ||  || : . .  ||:|
515 PAYLLILNAKDLSEVARAEFTVEINIPVTFHGLF 548
```

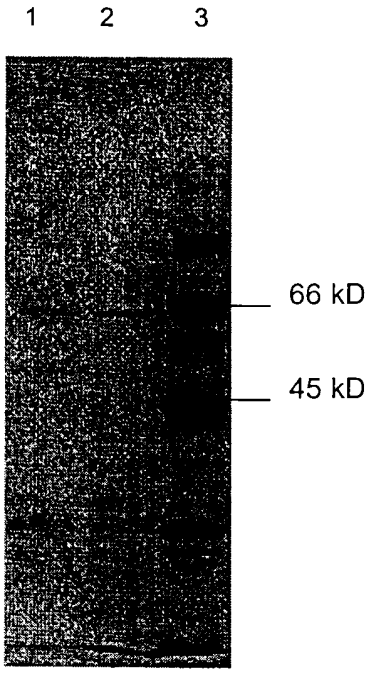

Fig. 6 shows a 10% polyacrylamide gel with E.coli expressed β,β-carotene 15,15'-monooxygenase after affinity tag purification; lane 1 and lane 2: 2 fractions from the Co^{2+}-chelate column showing the main band at 60 kD; lane 3: low range molecular weight marker (Bio Rad).

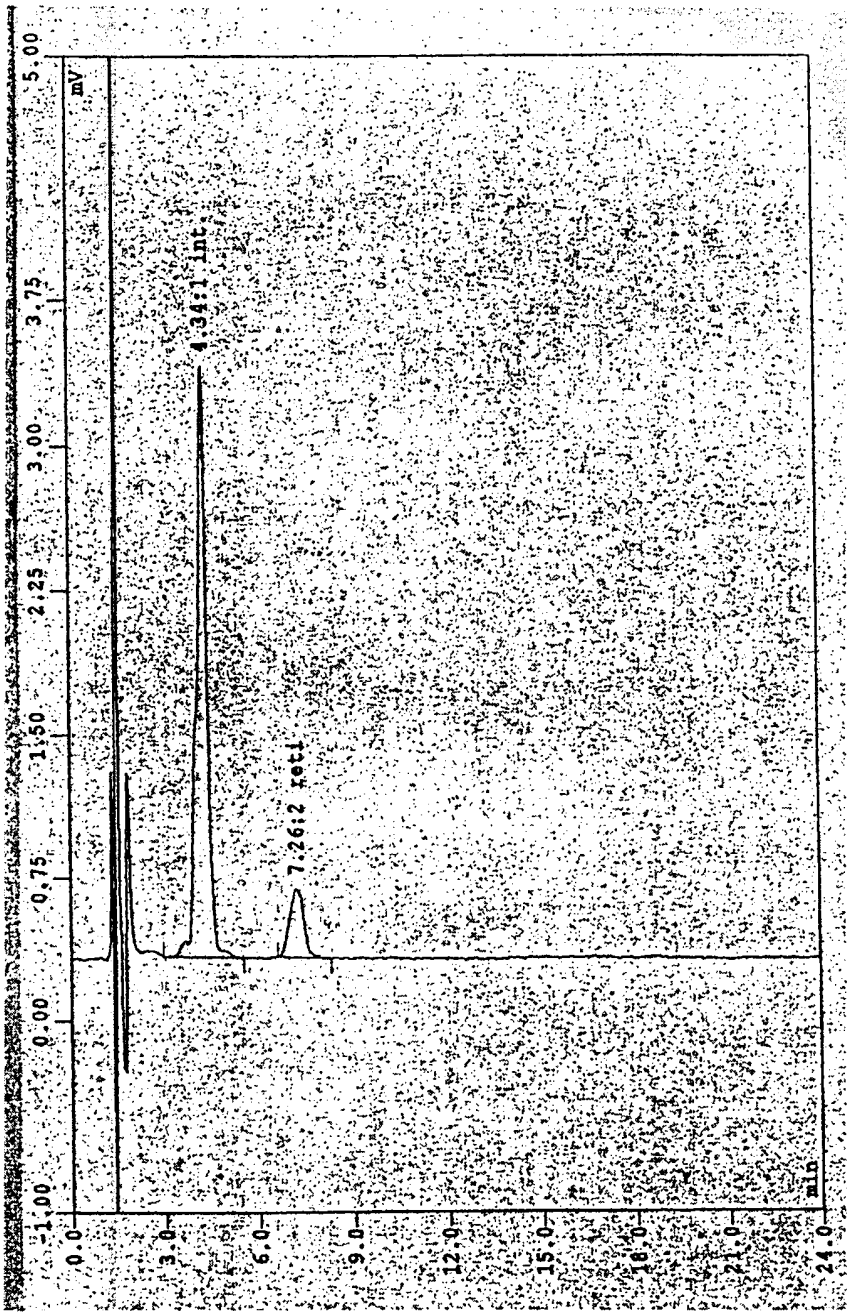

Fig. 7 shows an HPLC profile of the reaction mixture at the end of an actvity assay for the β,β-carotene 15,15'-monooxygenase following the procedure in example 1. The first peak in the chromatogram represents the internal standard, while the second peak corresponds to retinal as the only product formed during the central cleavage with β-carotene as substrate.

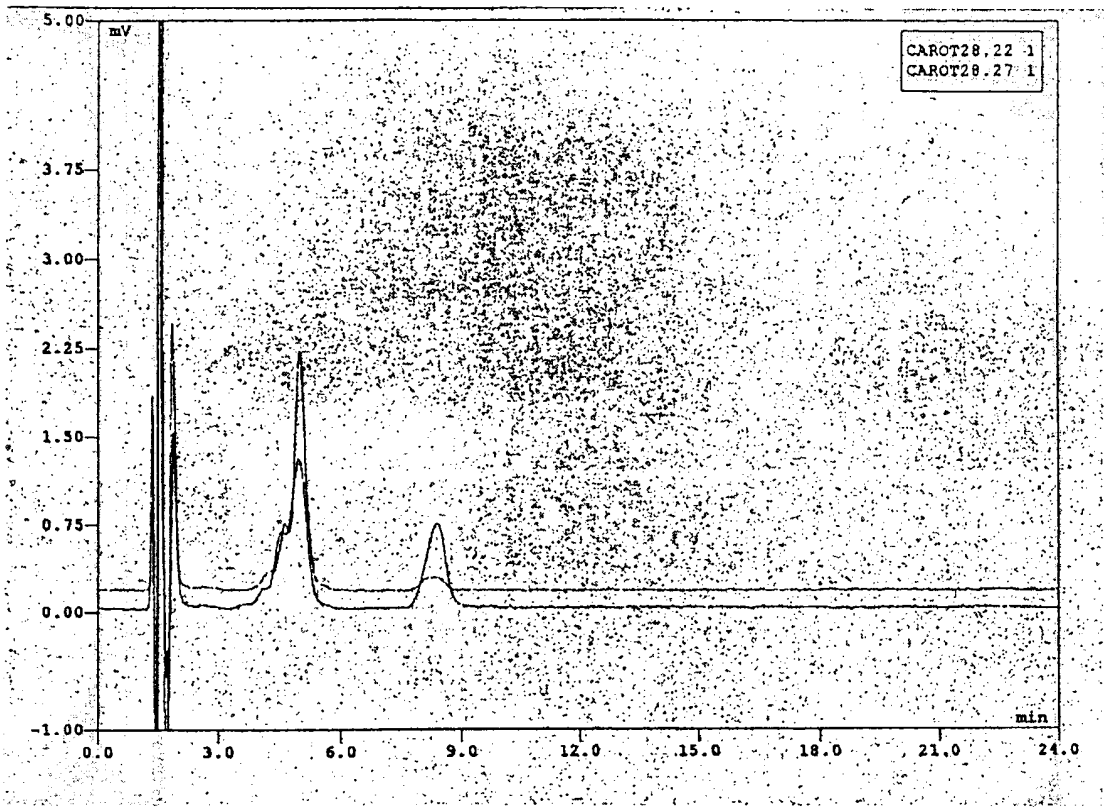

Fig. 8 confirms that the product peak in Fig. 7 is indeed retinal. A sample which was positive in the activity assay (green (upper) chromatogram) was spiked with retinal and analysed in second HPLC run (red (lower) chromatogram). The chromatograms of the two runs were then overlayed.